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ABSTRACT

This guide for the implementation of educational technology in the Troy (Ohio) City Schools begins with a discussion of the advantages of technology use in schools; the mission statement for the Troy schools; educational technology-related goals for the school district; the educational technology mission statement; and educational technology beliefs/guiding principles. The overall mission of the education technology program is given as providing students with an environment that fosters and promotes the use of technology as an essential skill for a productive life; some of the beliefs and guiding principles of the program include: teaching technological skills is a shared responsibility between teachers and media/technology staff members; technology facilitates student-directed learning and personal growth; and technology enhances four key elements of effective classroom learning--active, cooperative, interdisciplinary, and individualized learning. The handbook then presents ten district goals and six student goals. Each goal is followed by its corresponding implementation methods and activities, with activities for the student goals presented in separate lists for the elementary, junior high, and high school levels. Issues addressed by the district goals include staff development; planning, selection and implementation of technology; provision of current and appropriate resources; computer networking for information; and integration of technology into the curriculum. Issues addressed by student goals include educational and career related-computer applications, and the use of technology to gather information and for problem solving. Ethical conduct in technology use is a concern for both teachers and students. (JLB)

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The Troy City Schools

Implementation Guide for Educational Technology

November 1994

The Troy City Schools
500 North Market Street
Troy, Ohio 45373

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Implementation Guide for Educational Technology

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Introduction:

If learning is an act of exploration, then technology equips the explorer for the journey of a lifetime. There is a joy to being so carried away by curiosity, that you travel headlong toward a new frontier. Throughout history, the great explorers have been people from a myriad of disciplines, sparked by curiosity to chart new courses and forge novel ways of looking at the world: Scientists. Dancers. Astronomers. Sculptors. Engineers. Architects. Teachers.

Imagine a learning environment in which every student, teacher, principal, and parent is such a sojourner, as well as navigator and guide. And every question is a ticket to a journey of discovery: "Why do volcanoes erupt. . .?" "Who are immigrants. . .?" "What inspired Shakespeare to create Macbeth's witches. . .?".

Answering any single question may take you on a number of different paths to the same destination. The pursuit of knowledge is not finding out the shortest distance between two points. Rather it is a path that cuts freely across arbitrary boundaries between disciplines, cultures, media, epochs, languages, and geographical borders. Ideas and information do not exist to be swallowed whole, but are rather to be questioned, savored, and combined in fresh and relevant ways. Not for an instant, not just until the final exam, but for a lifetime.

Learning how to learn is more important than committing any particular fact or figure to memory. Learning is an activity that lives on long past graduation. The art of learning is defiantly active, rather than passive. It involves the gathering of information - from across the school or across the globe - and the synthesizing of that information into knowledge. It entails the honing of a point of view, and the communication of that viewpoint to others - to students, parents, teachers, and peers.

New Technologies equip us to gather, understand and communicate information and ideas as never before. At one time, the printing press was a magical invention that revolutionized the world of knowledge - and who had access to it. Over the centuries it has been joined by other icons: The typewriter. The telephone. The copy machine. The calculator. The personal computer.

At its best, the personal computer is a nearly invisible tool that transforms learning and frees the mind to soar. The computer allows the journey of learning to take place in the classroom or at home or in the library. It can also take place from a park bench or the seat of a school bus. The journey of learning can be a solitary experience - or an act of collaboration.

Technology guides the traveler far beyond the world of text, into a rich, interactive world of image and sound and movement and ideas. Technology blurs the boundaries between student, teacher, and administrator. It provides a way for all to explore the world together. Indeed, it can even forge connections with people one has never met who live in places that one has never been.

We can no more envision restricting such potential for inquiry, discovery, and interaction than we can imagine a world without the printing press . . . or the pencil.

Troy Schools Mission Statement:

"The Mission of the Troy City Schools is to provide an exemplary education for all individuals so they become valued members of society."

- **Troy Schools Strategic Plan**

Educational Technology Related District Goals:

- *Provide* staff development programs at the district and building levels for all employees.
- *Establish* curriculum to provide for the individual needs of all students.
- *Integrate* technology into the instructional program and administration.

- Troy Schools Strategic Plan

Educational Technology Mission Statement:

The Mission of the Troy Schools Educational Technology program is to provide all students with an environment that fosters and promotes the effective utilization of technology as an essential life skill in a complex and rapidly changing world.

Educational Technology Beliefs/Guiding Principles:

- Teaching technological skills is a shared responsibility between classroom teachers and media/technology staff members.
- Technology in and of itself, without teacher ownership and commitment, is of little value.
- Technological innovation is an on-going process that involves a wide range of multi-media applications.
- Technology enhances four (4) key elements of effective classroom learning:
    - active learning
    - cooperative learning
    - interdisciplinary learning
    - individualized learning
- Technology facilitates student-directed learning and personal growth.
- Significant learning takes place in the interaction between the schools' curriculum and the real world. Technology can be the link between these environments, and can act as a catalyst for this interaction.
- The use of technology should be integrated into all areas of the curriculum where appropriate.
- Every student shall have equal access to the benefits of technology in the learning process.
- The instructional process is greatly enhanced by utilizing methods and strategies that employ the latest and most appropriate technological advances.
- Implementing a quality educational technology program requires a district-wide commitment to meaningful and on-going staff development.

- Adequate resources must be provided in order to fully implement an effective educational technology program.

- Human worth is independent of the values attributed to technology by society.

- Relevant ethical issues must be addressed when using technology.

Educational Technology Program Goals and Implementation Methods/Activities:

I. District Goals:

- To provide a variety of meaningful and appropriate staff development programs/activities.

  Implementation Methods/Activities:

  - District:

    - Summer Renewal
    - After School Specials
    - Building Specific Activities
    - Department Specific Activities
    - Meet Individual Needs
    - On the Job Training
    - Integrate with Courses of Study
    - New Hardware/Software Acquisitions
    - Staff Meetings
    - Visitations to Exemplary Programs (Benchmarking)
    - Workshops
    - Conferences
    - Demonstration/Modeling
    - Cooperate with Outside Agencies:
      - Colleges/Universities
      - SOITA
      - Professional Organizations
      - Consultants/Speakers
      - Business Advisory Council

- To provide adequate planning time for review of new hardware and software, and for technology integration into lesson plans.

  Implementation Methods/Activities:

  - District:

    - Summer Renewal
    - Released Time
    - Inservice/Staff Development Activities
    - On the Job Training
    - Training "New Teachers"
      - TLC Orientation
      - Writing to Read Orientation
      - Network/Lab Orientation
    - Visitations to Exemplary Programs (Benchmarking)
    - Workshops
    - Conferences
    - Demonstration/Modeling
    - Grade Level Meetings

- To involve staff in the planning, selection and implementation of technology.

  Implementation Methods/Activities:

  - District:

    - K-12 Curricular Area Meetings (Input from)
    - Courses of Study Committees
    - Appropriations Planning
    - Software Preview
    - Building Level Technology/Computer Committees
    - North Central Evaluation Process
    - Chapter II Committee
    - Informal Input
    - Grant Writing
    - Visitations to Exemplary Programs (Benchmarking)

- To provide, as an ongoing process, the most current and appropriate resources across all grade levels and for all curricular areas.

  Implementation Methods/Activities:

  - District:

  - Funding:
    - General Fund
    - Chapter II Funds
    - Grant Funds
    - PTO Funds
    - Business Advisory Council
      - Technology Subcommittee
  - Human Networking:
    - Professional Organizations
    - Colleagues/Other School Districts
    - Vendors/Marketing Representatives
  - Selection Process:
    - Board of Education Adopted Selection Policy
    - Staff Input/Review
    - Standard Review Sources (Journals/Periodicals)
  - Technology Staff:
    - Professional Training and Experience
  - Staff Development Opportunities

- To create information rich environments through computer networking.

  Implementation Methods/Activities:

  - District:

  - Complete Networking Projects:
    - TLC (Heywood/Kyle/Van Cleve)
    - Intrabuilding Networks (Concord/Cookson/Hook/TJHS)
  - Automate Libraries:
    - Junior High
    - Elementaries (6)
    - E.T.C.

- Establish Building Network:
  - High School
- Provide Dial-In Access to Lab Servers
- Integrate onto Networks:
  - CD-ROM
  - Libraries
- External Networks:
  - INFOhio
- Telecommunications:
  - Inter Net
  - Ohio Link
  - Learning Link
  - Dialog
  - National Geographic Kids Network
  - Compuserve
  - Prodigy
  - OCIS

- To integrate technology into all areas of the curriculum.

<u>Implementation Methods/Activities:</u>

- District:

- Integrate into all Courses of Study
- Utilize Expertise of Technology Staff on Course of Study Committees
- As a Tool for Instruction
- As an Information Source:
  - Research and Reference Information
- Interdisciplinary Instruction
- Remediation
- Enrichment
- Individualization

- To hold staff accountable for technology integration and implementation by utilizing the appraisal and disciplinary processes established in the negotiated agreement.

  Implementation Methods/Activities:

  - District:

    - Effective Supervision
    - Staff Development Opportunities
    - Assistance/Remediation Opportunities

- To provide students with meaningful and frequent opportunities to use various forms of technology.

  Implementation Methods/Activities:

  - District:

    - Flexible Scheduling
    - Acquisition of Adequate Amount of Equipment
    - Integrate Into All Curricular Areas
    - Tie Into "Real World" Situations
    - Extra-Curricular Opportunities
    - Summer School
      - Remediation
      - Enrichment
    - Networks

- To create an environment that fosters the use of technology by students, teachers, classified staff, and administrators.

  Implementation Methods/Activities:

  - District:

    - Take Home Software and Hardware Opportunities (Staff)
    - Promote Easy Access/Flexible Scheduling
    - Staff Development Opportunities
    - On the Job Training

- Positive Interpersonal Communication
- Cooperation/Services Provided By:
  - Computer Lab Facilitators
  - Library Aides and Clerks
  - E.T.C. Staff
- Trained Corps of Substitutes:
  - Computer Lab Facilitators
  - Library Aides and Clerks

- To teach and model relevant ethical conduct regarding the use of technology.

<u>Implementation Methods/Activities:</u>

- District:

- Obey Copyright Laws/District Copyright Policy
- Proper Supervision
- General Awareness
- Staff Development Opportunities
- Abide by Software License Agreements

II. Student Goals:

- Students will be able to understand and demonstrate a variety of educational and career related computer applications.

  Implementation Methods/Activities:

  - Elementary:

    - Word Processing Software
    - Desktop Publishing Software
    - Simulation Software
    - Drill & Practice Software
    - Robotics
    - Tutorial Software
    - Database Software
    - TLC (Teaching and Learning with Computers) Program
    - Writing to Read Program

  - Junior High:

    - Word Processing Software
    - Desktop Publishing Software
    - Simulation Software
    - Drill & Practice Software
    - CAD (Computer Aided Design) Software
    - Robotics
    - Tutorial Software
    - Artificial Intelligence (AI)
    - Electronic Music Composition
    - Computer Generated Art
    - Database Software
    - Spreadsheet Software
    - Industrial Technology
    - Collection of Scientific Data by Computer Probe

- High School:

  - Word Processing Software
  - Desktop Publishing Software
  - Simulation Software
  - Drill & Practice Software
  - Ohio Career Information System (OCIS)
  - CAD (Computer Aided Design) Software
  - Robotics
  - Tutorial Software
  - Industrial Technology
  - Electronics
  - Graphic Arts
  - Computer Generated Art
  - Database Software
  - Spreadsheet Software
  - Electronic Music Composition
  - Personal Science Lab Computers/Software (PSL)

- Students will be able to use technology as a life-long tool for acquisition, management, communication, and presentation of information.

<u>Implementation Methods/Activities:</u>

- Elementary:

  - Telecommunications
  - Word Processing Software
  - Desktop Publishing Software
  - Database (Creation and Use of) Software
  - Keyboarding
  - MultiMedia
  - Graphing Software
  - Research Skills/Methods:
    - key word
    - logical operators
    - search strategies
  - CD-ROM software

- Junior High:

  - Telecommunications
  - Word Processing Software
  - Desktop Publishing Software
  - Database (Creation and Use of) Software
  - Spreadsheet Software
  - Keyboarding
  - MultiMedia
  - Graphing Software
  - Research Skills/Methods
    - key word
    - logical operators
    - search strategies
  - AV Equipment (Operations Skills)
  - CD-ROM
  - X-Press
  - Video Microscope

- High School:

  - Telecommunications
  - Word Processing Software
  - Desktop Publishing Software
  - Database (Creation and Use of) Software
  - Spreadsheet Software
  - Keyboarding
  - MultiMedia
  - Graphing Software
  - Research Skills/Methods
    - key word
    - logical operators
    - search strategies
  - AV Equipment (Operations Skills)
  - CD-ROM
  - X-Press
  - Automated Catalog (ISAAC)

- Students will determine how and when technology can be applied to problem solving.

Implementation Methods/Activities:

- Elementary:

  - Problem Solving Skills
  - Task Analysis
  - Critical Thinking Skills
  - Higher Order Thinking Skills
  - Cooperative Learning
  - Interdisciplinary Instruction

- Junior High:

  - Problem Solving Skills
  - Task Analysis
  - Critical Thinking Skills
  - Higher Order Thinking Skills
  - Cooperative Learning
  - Interdisciplinary Instruction
  - Scientific Method

- High School:

  - Problem Solving Skills
  - Task Analysis
  - Critical Thinking Skills
  - Higher Order Thinking Skills
  - Cooperative Learning
  - Interdisciplinary Instruction
  - Scientific Method

- Students will be able to understand, explain and act as positive role models for the ethical and moral issues surrounding the use of technology.

Implementation Methods/Activities:

- Elementary:

  - Copyright Restrictions
  - Network System Ethics and Courtesy
  - Privacy Rights
  - "Hacking"/Theft of Computer Data
  - Viruses/Sabotage
  - Plagiarism

- Junior High:

  - Copyright Restrictions
  - Network System Ethics and Courtesy
  - Privacy Rights
  - "Hacking"/Theft of Computer Data
  - Viruses/Sabotage
  - Plagiarism

- High School:

  - Copyright Restrictions
  - Network System Ethics and Courtesy
  - Privacy Rights
  - "Hacking"/Theft of Computer Data
  - Viruses/Sabotage
  - Plagiarism
  - Discussion topics: impact of technology on medicine, law, government, and the environment

- Students will demonstrate competence using technology.

Implementation Methods/Activities:

- Elementary:

  - Mouse Skills
  - Basic Computer Operations Skills
  - Network Operations Skills
  - Stand-Alone Operations Skills
  - Keyboarding Skills
  - Proper Handling of Software
  - Proper Handling of Hardware
  - Use of Reference Manuals
  - Menus and Directions
  - Technical Vocabulary
  - Identify Function of Components

- Junior High:

  - Mouse Skills
  - Basic Computer Operations Skills
  - Network Operations Skills
  - Stand-Alone Operations Skills
  - Keyboarding Skills
  - Proper Handling of Software
  - Proper Handling of Hardware
  - Use of Reference Manuals
  - Menus and Directions
  - Technical Vocabulary
  - Identify Function of Components

- High School:

  - Mouse Skills
  - Basic Computer Operations Skills
  - Network Operations Skills
  - Stand-Alone Operations Skills
  - Keyboarding Skills
  - Proper Handling of Software

- Proper Handling of Hardware
- Use of Reference Manuals
- Menus and Directions
- Technical Vocabulary
- Identify Function of Components

- Students will value himself/herself beyond the technology.

Implementation Methods/Activities:

- Elementary:

  - Self-Esteem
  - QUEST
  - DARE
  - Technology as a Tool
  - Ethics and Values of Society

- Junior High:

  - Technology as a Tool
  - Ethics and Values of Society

- High School:

  - Technology as a Tool
  - Ethics and Values of Society